CLAIMS

1. A digital entertainment terminal comprising:

a network interface module for coupling the terminal to a communication network for receiving a digital broadband channel and providing two-way control signaling communication between the terminal and the network;

a control processor controlling operations of the terminal and sending and receiving control signals over the two-way control signaling channel through the network interface module;

means for receiving inputs from a user and providing corresponding signals to the control processor;

program memory for storing software executable by the control processor, wherein in response to a command code received over the two-way signaling channel, the control processor causes data, received over the digital _including software to be_ broadband channel to be stored in the program memory; and

an audio/video processor controlled by the control processor, said audio/video processor being responsive to compressed, digital audio and video information received over the broadband channel to produce signals for driving an audio/video display device,

wherein the control processor executes the software received and stored in the memory to control subsequent _program_ operations of the terminal, including at least some operations of the audio/video processor and at least some responses to the inputs from the user.

2. A digital entertainment terminal as in claim 1, wherein the audio/video processor comprises:

an audio/video decoder for decompressing the compressed, digital information received over the broadband channel to produce a decompressed video signal and a decompressed audio signal;

a graphics overlay controller, controlled by said control processor, for generating graphic display information; and

10   means for combining the graphic display information with the decompressed video signal.

3. A digital entertainment terminal as in claim 2, wherein the audio/video decoder comprises:

an MPEG video decoder;

an MPEG audio decoder; and

5   an MPEG demultiplexer for selectively routing MPEG encoded video and audio packets carried on the digital broadband channel to the MPEG video decoder and the MPEG audio decoder, respectively.

4. A digital entertainment terminal as in claim 2, wherein the audio/video processor further comprises output means responsive to a signal from the means for combining *and* the decompressed audio signal for producing at

5   least one output signal for driving a television receiver type audio/video display device.

5. A digital entertainment terminal as in claim 1, wherein the software received and stored in the memory comprises an application program to be executed by the control processor to provide the user a specific interactive service via the network.

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6. A digital entertainment terminal as in claim 1, wherein the software received and stored in the memory includes at least a portion of an operating system to be executed by the control processor during subsequent

5   provision of a plurality of interactive services via the network.

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7.   A method of providing an interactive communication service comprising:

establishing a communication link between one of a plurality of available information service providers and a digital entertainment terminal, said communication link providing downstream transport of broadband, digital information to the digital entertainment terminal;

receiving software executable by a control processor of the digital entertainment terminal from the one information service provider via the communication link;

storing the software in a memory within the digital entertainment terminal;

receiving digitized audio and video information over the communication link; and

supplying the software from the memory to the control processor for execution, to control interactions of a user of the digital entertainment terminal with a service offered by the one information service provider and to produce an audio/video output responsive to the received digitized audio and video information.

8.   A method as in claim 7, wherein the software received and stored in the memory is a complete application program for providing the user a specific interactive service offered by the one information service provider through the communication link.

9.   A method as in claim 7, wherein the software received and stored in the memory includes at least a portion of an operating system of the control processor.

10.   A method as in claim 9, wherein the step of storing the software in memory is dependent on whether the one information service provider is authorized access to operating system software stored in the memory.

11. A method as in claim 7, further comprising the steps of:

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establishing a new∧ communication link between the digital entertainment terminal and a second information service provider different from the one information service provider;

receiving software executable by the control processor of the digital entertainment terminal via the new communication link from the second information service provider;

writing the software from the second information service provider over software previously stored in the memory within the digital entertainment terminal;

receiving digitized audio and video information over the new communication link from the second information service provider; and

supplying the software from the second information service provider from the memory to the control processor for execution, to control interactions of the user of the digital entertainment terminal with a service offered by the second information service provider and to produce an audio/video output to the user responsive to the digitized audio and video information received from the second information service provider.

12. A method as in claim 7, further comprising the steps of:

receiving a command from the one information service provider;

receiving new software executable by the control processor of the digital entertainment terminal from the one information service provider via the communication link;

writing the new software over software previously stored in the memory within the digital entertainment terminal;

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receiving further digitized audio and video information over the downstream, broadband, digital communication link; and

15   supplying the new software from the memory to the control processor for execution, to control interactions of the user with a service offered by the one information service provider and to produce an audio/video output responsive to the further digitized audio and video

20   information.

13.   A method as in claim 7, wherein the establishing step comprises:

receiving a service provider selection as an input to the digital entertainment terminal;

5   in response to the selection input, establishing a two-way signaling communication link between the digital entertainment terminal and a gateway operated by the one information service provider; and

establishing a downstream, broadband, digital

10   communication link between the digital entertainment terminal and a server operated by the one information service provider.

14. A digital entertainment terminal comprising:

a network interface module for coupling the terminal to a communication network for receiving a digital broadband channel and providing two-way control signaling

5   communication between the terminal and the network;

a control processor controlling operations of the terminal and sending and receiving control signals over the two-way control signaling channel through the network interface module;

10   means for receiving inputs from a user and providing corresponding signals to the control processor;

system memory for storing software executable by the control processor, at least a portion of the stored

software having been received over the communication network, the system memory comprising non-volatile memory storing an operating system for the control processor and random access memory storing application software executable by the control processor; and

an audio/video processor responsive to compressed, digital audio and video information received over the digital broadband channel through the network interface module and controlled by the control processor during execution of said software, the audio/video processor comprising:

(a) an audio/video decoder for decompressing the compressed, digital information received over the broadband channel to produce a decompressed video signal and a decompressed audio signal;

(b) a graphics overlay controller, controlled by the control processor, for generating graphic display information; and

(c) means for combining the graphic display information with the decompressed video signal, to produce a signal for driving a video display device.

15. A digital entertainment terminal as in claim 14, wherein the network interface module is a replaceable module detachably coupled to the digital audio/video processor and the control processor.

16. A digital entertainment terminal as in claim 14, wherein the audio/video decoder comprises:

an MPEG video decoder;

an MPEG audio decoder; and

an MPEG demultiplexer for selectively routing MPEG encoded video and audio packets carried on the digital

broadband channel to the MPEG video decoder and the MPEG audio decoder, respectively.

17.   A digital entertainment terminal as in claim 14, wherein the audio/video processor further comprises output means responsive to the signal from the means for combining and the decompressed audio signal for producing at least one output signal for driving a television receiver type audio/video display device.

18.   A digital entertainment terminal as in claim 17, wherein the output means comprises:
a video digital to analog converter responsive to the signal from the means for combining; and
an audio digital to analog converter responsive to the signal from the decompressed audio signal.

19.   A digital entertainment terminal as in claim 14, wherein the means for receiving inputs from a user comprises an infrared receiver.

20.   A digital entertainment terminal as in claim 14, further comprising an infrared transmitter responsive to signals from the control processor.

21.   A digital entertainment terminal as in claim 14, further comprising a serial data transceiver port coupled to the control processor.

22.   A digital entertainment terminal as in claim 14, further comprising a magnetic card reader coupled to the control processor.

23.   A digital entertainment terminal as in claim 14, further comprising a memory card interface port

coupled to the control processor for two-way data communication therewith.

24. A communication method comprising:

establishing a communication link between a digital entertainment terminal and one of a plurality of available information service providers carrying
5   broadband digital information to the digital entertainment terminal;

determining if the one information service provider is authorized to download operating system software;

if the one service provider is authorized, receiving
10   operating system software executable by a control processor of the digital entertainment terminal from the one information service provider via the communication link and storing the operating system software in a memory within the digital entertainment terminal;
15   receiving digitized audio and video information over the communication link; and

supplying the operating system software from the memory to the control processor for execution to control operations of the digital entertainment terminal.

25. A method as in claim 24, further comprising the steps of:

receiving application software executable by the control processor from the one information service
5   provider via the communication link;

storing the application software in the memory within the digital entertainment terminal; and

supplying the application software from the memory to the control processor for execution under control of
10   the operating system, to control interactions of a user of the digital entertainment terminal with a service offered by the one information service provider and to produce audio/video information outputs to the user

responsive to the received digitized audio and video
15 information.

26. A method as in claim 25, further comprising the
steps of:

establishing a new communication link between the
digital entertainment terminal and a second information
5 service provider different from the one information
service provider;

receiving application software executable by the
control processor of the digital entertainment terminal
via the new communication link from the second
10 information service provider;

writing the application software from the second
information service provider over application software
previously stored in the memory within the digital
entertainment terminal;

15 receiving digitized audio and video information over
the new communication link from the second information
service provider; and

supplying the application software from the second
information service provider from the memory to the
20 control processor for execution, to control interactions
of the user of the digital entertainment terminal with a
service offered by the second information service
provider and to produce audio/video information outputs
to the user responsive to the digitized audio and video
25 information received from the second information service
provider.

27. A method as in claim 25, further comprising the
steps of:

receiving a command from the one information service
provider;

5 receiving new application software executable by the
control processor of the digital entertainment terminal

from the one information service provider via the communication link;

writing the new application software over
10 application software previously stored in the memory within the digital entertainment terminal;

receiving further digitized audio and video information over the communication link; and

supplying the new application software from the
15 memory to the control processor for execution, to control interactions of the user with a service offered by the one information service provider and to produce audio/video information outputs to the user responsive to the further digitized audio and video information.

28. A communication method comprising:

establishing a communication link between a digital entertainment terminal and one of a plurality of available information service providers carrying
5 broadband, digital information to the digital entertainment terminal;

determining if operating system software previously stored in a memory within the digital entertainment is compatible with a service offered by the one information
10 service provider;

if the previously stored operating system software is compatible, supplying the previously stored operating system software from the memory to the control processor for execution;

15 if the previously stored operating system software is not compatible:

(1) receiving new operating system software
executable by the control processor from the
one information service provider via the
20 communication link,

(2) writing the new operating system software
in the memory over the previously stored
operating system software, and

(3) supplying the new operating system
software from the memory to the control
processor for execution;

receiving digitized audio and video information over
the communication link; and

providing the user a service responsive to the
received digitized audio and video information and
controlled by the executed operating system software.

29. A method as in claim 28, further comprising the
steps of:

receiving application software executable by the
control processor from the one information service
provider via the communication link;

storing the application software in the memory
within the digital entertainment terminal; and

supplying the application software from the memory
to the control processor for execution under control of
the operating system, to control interactions of a user
of the digital entertainment terminal with said service
offered by the one information service provider and to
produce audio/video information outputs to the user
responsive to the received digitized audio and video
information.

30. A method as in claim 29, further comprising the
steps of:

establishing a new communication link between the
digital entertainment terminal and a second information
service provider different from the one information
service provider;

receiving application software executable by the
control processor of the digital entertainment terminal

via the new communication link from the second
10 information service provider;

writing the application software from the second
information service provider over application software
previously stored in the memory within the digital
entertainment terminal;

15 receiving digitized audio and video information over
the new communication link from the second information
service provider; and

·supplying the application software from the second
information service provider from the memory to the
20 control processor for execution, to control interactions
of the user of the digital entertainment terminal with a
service offered by the second information service
provider and to produce audio/video information outputs
to the user responsive to the digitized audio and video
25 information received from the second information service
provider.

31. A method as in claim 29, further comprising the
steps of:

receiving a command from the one information service
provider;

5 receiving new application software executable by the
control processor of the digital entertainment terminal
from the one information service provider via the
communication link;

writing the new application software over
10 application software previously stored in the memory
within the digital entertainment terminal;

receiving further digitized audio and video
information over the communication link; and

supplying the new application software from the
15 memory to the control processor for execution, to control
interactions of the user with a service offered by the
one information service provider and to produce

audio/video information outputs to the user responsive to the further digitized audio and video information.

32. An information distribution system comprising:

a communication network selectively providing control signaling links and broadband communications channels;

5   a plurality of information service provider systems connected to the network, each provider system being capable of receiving control signal inputs via a control signaling link through the communication network and transmitting broadband digital information via a

10   broadband communication channel through the communication network; and

a plurality of digital entertainment terminals, one terminal comprising:

a network interface module for coupling the one

15   terminal to the communication network for receiving a digital broadband channel from one of the provider systems and transmitting control signals to the one provider system;

a control processor controlling operations of the

20   one terminal and generating the control signals for transmission to the one provider system;

means for receiving inputs from a user and providing corresponding signals to the control processor;

program memory for storing software executable by

25   the control processor, wherein the control processor causes predetermined data received over the digital broadband channel to be stored as software in the program memory; and

an audio/video processor responsive to compressed,

30   digital information received over the digital broadband channel to produce a signal for driving an audio/video display device,

wherein the control processor executes the software in the memory to control subsequent operations of the one terminal, including at least some operations of the audio/video processor and at least some responses to the inputs from the user in accord with a service offered by the one provider system.

33. A system as in claim 32, wherein the one provider system comprises:

a server storing the predetermined data and storing the compressed, digital information; and

a gateway for receiving the control signal inputs via the control signaling link through the communication network and controlling transmission of the predetermined data and the compressed digital information through the communication network to the one terminal.

34. A system as in claim 33, wherein the communication network comprises a telephone network.